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A cross-national exploration of societal-level factors associated with child physical abuse and neglect

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Abstract

Children around the world experience violence at the hands of their caregivers at alarming rates. A recent review estimates that a minimum of 50% of children in Asia, Africa, and North America experienced severe physical violence by caregivers in the past year, with large variations between countries. Identifying modifiable country-level factors driving these geographic variations has great potential for achieving population-level reductions in rates of child maltreatment. This study builds on previous research by focusing on caregiver-reported physical abuse and neglect victimisation, examining 22 societal factors representing 11 different constructs among 42 countries from 5 continents at different stages of development. Our findings suggest that gender inequity may be important for both child physical abuse and neglect. Indicators of literacy and development may also be important for child neglect. Given the limitations of the correlational findings and measurement issues, it is critical to continue to investigate societal-level factors of child maltreatment so that interventions and prevention efforts can incorporate strategies that have the greatest potential for population-level impact.

Keywords

Child abuse; child neglect; child maltreatment; etiology

Children around the world experience violence at the hands of their caregivers at alarming rates. A review of national estimates in 96 countries suggests that a minimum of 50% of children in Asia, Africa, and North America experienced severe physical violence by caregivers and others in the past year (Hillis, Mercy, Amobi, & Kress, 2016). However, this review also found much lower rates of children experiencing severe physical violence in Europe and in South America. Others have also found geographic variation of child physical neglect from 7% in Europe to 19% in North America (Stoltenborgh, Bakermans-Kranenburg, & van IJzendoorn, 2013).

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In addition to its high prevalence, child maltreatment has devastating consequences across the lifespan. Decades of research find a robust, dose–response relationship between child maltreatment and other forms of adverse childhood experiences and health risk behaviours such as smoking (Felitti et al., 1998; Ford et al., 2010), alcohol abuse (Dube, Anda, Felitti, Edwards, & Croft, 2002), substance abuse (Dube et al., 2003), sexual risk-taking (Hillis, Anda, Felitti, & Marchbanks, 2001), the leading causes of adult morbidity and mortality (Felitti et al., 1998; Gilbert et al., 2010), and life-changing outcomes such as not graduating from high school, being unemployed, and living with lower income (Metzler, Merrick, Klevens, Ports, & Ford, 2017). Consequently, the lifetime economic burden of child maltreatment is substantial (Fang, Brown, Florence, & Mercy, 2012). The prevalence and societal burden of child maltreatment make it a public health priority.

The socioecological model has long been used to understand the occurrence of child maltreatment (Garbarino, 1977). The model proposes that factors simultaneously operate and interact at the individual-, family-, community-, and societal-level to increase or decrease the likelihood of child maltreatment. While substantial research has identified numerous individual- and family-level factors that increase the risk for both physical abuse and neglect (Stith et al., 2009) and some research has identified community-level factors (Coulton, Crampton, Irwin, Spilsbury, & Korbin, 2007; Freisthler, Merritt, & LaScala, 2006), research examining societal- or country-level factors of child maltreatment is scarce. It is important to identify societal-level risk factors that are modifiable because this has the greatest potential for achieving population-level reductions in rates of child maltreatment (Putnam & Galea, 2008).

Several theories on how societal-level factors could be related to child maltreatment have been proposed. Economic strain theory, proposed by criminologists, suggests that the inability to achieve monetary success creates stress or frustration that then leads to violence (Agnew, 1999). Researchers guided by this theory have examined income inequality, unemployment, women in the workforce, and expenditures on social welfare programmes. Social disorganisation theory, proposed by sociologists, states that social pathology results from the weakening of community organisation and its ability to exercise social control of its members' behaviours (Sampson & Groves, 1999) has undergirded examination of variables such as the rapidity of development and ethnic heterogeneity. Sociologists have also proposed cultural spill-over theory, which posits that legitimating of violence by the state (e.g. war, death penalty, and homicide rates) may increase acceptance of violence and spill-over to other types of violence (Baron & Straus, 1987). Such theories provide a theoretical rationale connecting societal-level risk and protective factors to child abuse and neglect; however, none of these theories have demonstrated consistent, empirical support when examining associations with violence against children.

In addition to these theoretical frameworks, Krug, Dalhberg, Mercy, Zwi, and Lozano (2002) have suggested that gender inequality and cultural values and norms related to gender roles, parent–child relationships, and the privacy of the family may also be societal factors related to child maltreatment but proposed no potential mechanisms. We also propose exploring education as a societal-level determinant because a better-educated society would be

expected to make better-informed decisions for the health of its people and others have found it to be associated with severe physical discipline (Lansford et al., 2012).

The empirical research on societal-level factors of child maltreatment focuses, for the most part, on child homicides (Briggs & Cutright, 1994; Butchart & Engström, 2002; Christoffel, Lin, & Stamler, 1981; Fiala & LaFree, 1988; Gartner, 1990, 1991; Hunnicutt & LaFree, 2008; Moniruzzaman & Andersson, 2008). Although this cross-national research suggests several societal risk factors for child homicides, with the exception of three studies (Butchart & Engström, 2002; Hunnicutt & LaFree, 2008; Moniruzzaman & Andersson, 2008), it is has focused on developed or high-income countries limiting generalisability of these findings. Child homicides as an indicator of child maltreatment also have several problems. Examination of existing data suggests that child homicide and child abuse are not a continuum but distinct forms of violence, and therefore, findings from examinations of child homicide may not be generalised to other forms of violence toward children (Gelles, 1991). In addition, the completeness of death data varies across countries and could lead to differential underestimates associated with country characteristics. Homicides could be coded erroneously as ‘undetermined’ or ‘unintentional’. Finally, deaths due to child neglect may be excluded from homicides in some countries because they do not meet the definition of ‘homicide’ defined as a deliberate act of commission.

More recently, researchers have used other indicators of child maltreatment beyond deaths. For example,Gilbert et al. (2012) examined hospitalisations, reports to child protective services, and out-of-home placements in addition to deaths to compare time trends in six developed countries with the purpose of identifying changes in trends associated with changing conditions or policies. However, no decreasing trends were observed despite several policy changes in several countries. The authors posit that changes in countries’ child maltreatment identification or reporting policies may have contributed to unchanging trends.

Surveys asking about perpetration or victimisation may be a better way of assessing child maltreatment. Estimates based on self- or parent-reported incidents of maltreatment suggest physical abuse to be 20 times greater than abuse reported to authorities (Finkelhor, Vanderminden, Turner, Hamby, & Shattuck, 2014), although these studies may still underestimate the scale of the problem (Gilbert et al., 2009). Three cross-national studies have examined the association of societal-level risk factors on child maltreatment using self- or parent-reported survey data. Two of these studies used Multiple Indicator Cluster Survey (MICS) data from 25 middle and lower income countries and found that caregiver reported child physical and psychological abuse in the past month was higher in countries with high rates of acceptance of partner violence and corporal punishment, that is, where violence in families is a cultural norm (Lansford, Deater-Deckard, Bornstein, Putnick, & Bradley, 2014) and in countries with lower levels of education (Lansford et al., 2012). The third study used countries reporting Childhood Trauma Questionnaire (CTQ) scores (Viola et al., 2016). It asked children 12 and over to rate the frequency that events related to child abuse and neglect occurred when they ‘were growing up’ and found lower childhood physical neglect estimates in countries with higher gross domestic products.

In this exploratory ecological study, we build on previous research by (a) focusing on parent-reported physical abuse and neglect victimisation; (b) examining a greater variety of societal factors (e.g. gender inequity, cultural norms, child and maternal well-being, the political environment, and education); and (c) expanding the size of the sample of countries and their regional and stage of development variability. Our purpose is to uncover associations between child abuse and neglect rates and potential societal-level indicators in an effort to highlight constructs that scientists may wish to include in future (more rigorous) studies.

Methods

An initial search of Medline, PsychINFO, and Google Scholar was conducted to identify publications with country-level data on child physical abuse or neglect, based on nationally representative random samples of self or parent reports. We excluded countries with data pertaining to sexual abuse only or based on reports to child welfare or hospitalisations or limited to a geographic area. We found 62 countries that met these inclusion/exclusion criteria. Upon examination of these publications, 18 surveyed older children and asked about physical abuse during their lifetime, 2 surveys asked caregivers or children about physical abuse during the past year, and 42 surveys asked about physical abuse or neglect in the past month. These differing recall periods raised issues with comparability. To use the largest sample available while allowing us to make comparisons across countries, we excluded countries that did not have estimates for past month physical abuse or neglect. As such, our final sample consisted of 42 countries; 36 of these came from Multiple Indicator Cluster Surveys (MICS; UNICEF, 2013) and 6 came from Demographic and Health Surveys (DHS; USAID, 2013). Thus, our measures are limited to the MICS/DHS questions. The rates reported for these countries are based on the same set of questions on severe physical punishment in the past month. These countries are listed by region in Table 1 with corresponding level of development, data source, year data were collected, age range of the index children sampled for questions on experiences with physical abuse, and sample size.

Measures

We used the MICS/DHS country report of the percentage of children experiencing severe physical punishment in the past month as a proxy for physical abuse, as our main outcome. For the MICS/DHS country survey, an index child between 2 and 14 years of age (except for Egypt which used 3–17 age range) is selected randomly in the household for questions on child discipline. Both MICS and DHS use the same set of questions and define severe physical punishment as parents' report of the index child being hit or slapped on the face, head, or ear; beat/hit with something (e.g. an object); or hit over and over as hard as one could by anyone in the household in the past month in response to the child's bad behaviour. The set of punishment questions is prefaced by 'All adults use certain ways to teach or to address a behaviour problem.' Table 1 shows the rates reported for each country.

Our secondary analyses focus on child neglect. We used another measure from the MICS/DHS (both use the same question) that reports the percentage of children aged 0–59 months left alone or under the care of another child younger than 10 years of age for more

than one hour at least once in the last week. These percentages were available for 31 countries (also reported in Table 1).

To identify potential societal-level factors of interest, several trained research assistants reviewed existing publicly available data sources with the PI, and compiled those data that were available for the selected countries. For each factor, the same data source was used for all 42 countries so that the definition of the factor was the same across countries. The data for each factor had to correspond to the country level (e.g. unemployment rate in each country at the time of the MICS/DHS survey). We searched for available data on factors that tapped the following theories or constructs:

1. Economic stress (e.g. income inequality, poverty, unemployment, women in the workforce, number of children in the household, and strength of the safety net or social welfare programmes) with the theoretical assumption that economic stress may lead to frustration and anger which could result in abuse or it might drain mental and emotional resources away from caring for a child which could result in neglect;
2. Social disorganisation (e.g. rapidity of development, and ethnic heterogeneity) which may lead to abuse or neglect because of weakened community ability to control its members;
3. Cultural spill-over theory (e.g. existence of the death penalty or armed conflict, military expenses compared to expenditures on education or health; rates of homicide, rape, and crime) that suggests that violence legitimised (or normalised) by the state may spill-over to the home;
4. Cultural norms (e.g. bans or beliefs related to corporal punishment or beliefs around age when children should start being disciplined, beliefs on what is valued in children, religious beliefs, and individualistic vs. collective culture) prescribe what is acceptable;
5. Gender inequity (e.g. women's enrolment in education compared to men, difference in years of education between men and women, differences in age at marriage, female magistrates or judges, female legislators, female ownership of businesses, strictness of gender roles, and ratification of conventions protecting women) with the assumption that the empowerment of women will increase their ability to protect children;
6. Women's health and health care (e.g. maternal mortality, coverage for prenatal care, and ease of access to contraception including abortion) with the assumption that healthy caregivers will be more able to care for children and contraception will prevent unwanted children;
7. Children's well-being (e.g. availability and quality of child care, children in school, child labour, malnutrition, and access to health care) as an indicator of how much children are valued;

8. Burden of caring for children (e.g. number of children in the household, women in the labour force, paid maternity leave) with the assumption that greater burden will increase caregivers' stress which may lead to abuse or neglect;

9. Economic environment (e.g. market freedom, economic growth) with the assumption that a freer market and higher economic growth may lead to greater income inequality, which could lead to stress.

10. Education (e.g. overall literacy and female literacy, in particular) because a better-educated society would be expected to make better-informed decisions for the health of its people which would lead to policies supportive of families.

11. Overall development (e.g. gross domestic product, life expectancy, and standards of living) with the assumption that countries that have better economic and developmental status may provide children and families with safer and more stable environments that nurture healthy relationships between children and caregivers.

We collected data for 122 societal-level variables. However, to decrease problems with missing information, we eliminated 75 variables from our analyses because information was missing for 14 or more of the countries (i.e. 30%) in our sample. Some potentially important variables eliminated because of missing information include the generosity of social protection or safety net programmes; social expenditures; expenditures on health or military; homicide and crime rates; the age at which children are considered responsible for their criminal behaviour; qualities valued in children (e.g. obedience); mother's beliefs in the need for corporal punishment or situations in which partner violence is justified; the gender empowerment index; the gender development index; and female magistrates or business owners. In addition, we were unable to find data on the rapidity of a country's development, beliefs on the age when children should start being disciplined, individualistic vs. collective culture (for the specific years of interest), strictness of gender roles (for the specific years of interest), or availability or quality of child care.

To further reduce the number of variables, three of the authors (J.K., K.P., and C.M.A.) selected the two variables that best represented each construct from a theoretical, conceptual, and measurement perspective. Table 2 lists the 22 variables included in our analyses with their definitions and data sources.

Analyses

Using the country-level child abuse and neglect rates and country-level estimates for the included factors, we estimated bivariate correlation coefficients for continuous or ordinal variables and point bi-serial correlation coefficients for dichotomous variables. We report the squared correlation coefficient for ease of interpretation as well as negative correlation coefficient signs, in parentheses, to inform the direction of the association. To avoid a type II error, given the number of statistical comparisons, we focus on comparisons meeting a more stringent level of $p < .001$. We ran a multivariate regression model for child neglect using all statistically significant predictors but the findings did not add information above and beyond the correlational analyses and so it is not reported.

Results

Physical abuse rates in the past month varied across countries from a range of 0.7% to 54% and child neglect rates varied from 1% to 59% (see Table 1).

Table 3 shows the squared correlation coefficients between all societal-level variables and physical abuse. Only the Social Institutional and Gender Index, a measure of gender inequity, met our stringent criteria of $p < .001$. Specifically, lower scores indicating less discrimination against women on the Social Institutional and Gender Index were associated with lower rates of child physical abuse and accounted for 34% of the variance in physical abuse. The other indicator of gender inequity (Gender Inequality Index) was associated with physical abuse at the $p < .05$ level.

Table 3 also reports the squared correlation coefficients between all variables explored and child neglect. Number of children in the household, child labour, the Gender Inequality Index, overall education and female literacy rates, and the Human Development Index were significant at $p < .001$, all in expected directions. Specifically, increased number of children in the home, percent child labour, and gender inequality scores were positively associated with increased rates of child neglect while overall and female literacy rates and scores on the Human Development Index were negatively associated with child neglect. Child labour and female literacy were the most strongly correlated; each explained 50% of the variance in child neglect without adjusting for other variables.

Discussion

Little is known about societal-level factors that increase or decrease the risk for child physical abuse or neglect and the little known is based on child homicides which has several limitations, such as misclassification and exclusion of neglect. To address this gap, we explored associations between parent-reported child victimisation and 22 variables representing 11 different constructs among 42 countries from different regions of the world. We found that gender inequity (as measured by the Social Institutional and Gender Index) was associated with higher levels of reported severe physical punishment. Gender inequity, education, social development, number of children in a household, and the prevalence of child labour were associated with reported supervisory neglect.

We found little support for variables that capture the constructs of economic stress and cultural spill-over theories, which previous studies had associated with child homicides. There was also no support for cultural norms or economic environment. On the other hand, the findings around gender inequity, literacy, and development suggest new potential avenues to explore associations between societal-level risk and protective factors and child maltreatment outcomes in greater depth and with more rigorous designs.

Although our study adds variables of interest that have not been studied previously (e.g. gender inequity, cultural norms, and economic environment), and greatly expanded regional representation and variability by including more countries, several limitations must be acknowledged before discussing the potential implications of these findings. First, the countries in our sample do not include the European Union or many of the most populated

countries such as Brazil, China, India, Indonesia, Russia, or Japan. This may reflect UNICEF's or AID's criteria for selecting countries for their MICS or DHS surveys. It is possible that data are available from these excluded countries but not published in the peer-reviewed literature. Future studies might reach out to Ministries of Health or Child Welfare to include a greater number of developed countries.

Several variables of interest were excluded for lack of data and those examined have additional limitations. For example, both the child physical abuse and neglect measures are limited by issues related to parents' reports (i.e. recall bias, social desirability bias) and measurement issues (e.g. validity and reliability of one-item measures, different periods of recall, including anyone in the household as a perpetrator). Moreover, they correspond to only two specific aspects of physical abuse (severe physical punishment) and neglect (child being left in the care of another child), both may be interpreted very differently in different cultures and languages and may be culturally acceptable. The societal-level factors explored are dependent on the reliability of the data sources, some of which use government reports. Because data for some of the variables were available only for certain years, the exposure-outcome data are not optimally time-matched for all countries. However, societal-level factors tend to change slowly and therefore this mismatch should not be of great concern. Some of these 'societal-level' factors can be conceptualised as individual-level factors (e.g. literacy). However, aggregate variables often tap a different construct than at the individual level (Firebaugh, 1978). For example, poverty at the individual level is different from neighbourhood poverty. It is the aggregate construct that we are interested in to identify factors at the societal level.

A major limitation is that our findings are based on correlations. Some of these correlations may be the result of measures tapping into similar constructs (e.g. child labour and malnutrition and their associations with supervisory child neglect). Future studies using natural experiments could disentangle causal effects. Although the aim of this study was to identify societal-level factors that increase country-level rates of child physical abuse and neglect, the associations observed do not exclude the possibility that they are the result of individual-level factors.

Although we cannot claim any causal relationships for any correlation, we suggest some potential mechanisms to explain how they may be related. The correlations between gender inequities and child maltreatment are of particular interest. Women's status has long been associated with several indicators of children's health (Heaton, 2015). Strong associations of several indicators of gender (in) equity with child physical abuse and neglect may be explained by evidence showing that increased rights for women lead to increased spending on children (e.g. investments in health and education), which, in turn, lead to greater societal development (Doepke, Tertilt, & Voena, 2011).

The correlations observed between societal education, development, and child neglect are not surprising and can be explained in several ways. Higher educated societies are better positioned to access information, understand the implications of policy, as well as individual behaviour choices, more actively participate in the political process, and contribute to the development of a society (Lochner, 2011). Furthermore, a better-educated society probably

has higher incomes which facilitates better health-care coverage, child care, and paid leave to care for sick or newborn children – which have been shown to decrease child maltreatment rates (Klevens, Barnett, Florence, & Moore, 2015; Klevens, Luo, Xu, Peterson, & Latzman, 2016).

Although findings of this study suggest new directions for understanding and addressing child maltreatment, their relevance should be replicated in future studies. Future research can take advantage of newer MICS/DHS surveys and more updated societal-level data or more robust measures such as the CTQ that has been used in 28 countries from 6 continents (Viola et al., 2016). As efforts by the Centers for Disease Control and Prevention (2015) and partners increase the number of countries with Violence Against Children Surveys, researchers may conduct more in-depth comparisons of countries that have very different rates of child maltreatment at similar levels of a societal variable of interest (e.g. literacy rates or gender equity) to unearth new factors. When policies or country conditions change, conducting longitudinal analyses would provide stronger evidence for causal relationships.

Child maltreatment, including physical abuse and neglect, is a significant public health concern that can be prevented. Based on extensive research on risk factors of child maltreatment at the individual- and family-level, several effective interventions have been developed (Hillis et al., 2015). While child maltreatment interventions that target individual- and family-level risk factors have led to declines in child physical abuse, intervention and prevention efforts that focus on factors that reach entire communities or societies would theoretically have a greater and more sustained impact. Thus, it is critical for countries to continue to monitor the magnitude of child abuse and neglect and that researchers continue to investigate societal-level factors associated with child maltreatment so that interventions and prevention efforts can incorporate strategies that have the greatest potential for population-level impact – assuring that all children and families have access to safe, stable, nurturing relationships and environments, the essentials for optimal health and development.

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Table 1

Countries with parental-reported physical abuse victimisation by region, year data collected, age range of index child, sample size, and percent of children reported to have experienced physical abuse or neglect.

		Survey conducted by, year conducted	Age range of index child, sample size	% Physically abused past month	% Neglected past week
AMERICAS	Belize[b]	MICS, 2006	2–14, 2400	6.6	4.0
	Dominican Republic[b]	MICS, 2000	2–14, 1139	37.7	NI
	Guyana[b]	MICS, 2007	2–14, 2953	15.0	11.3
	Haiti[b]	DHS, 2012	2–14, 8455	16.0	NI
	Jamaica[b]	MICS, 2005	2–14, 2243	7.5	3.5
	Suriname[b]	MICS, 2006	2–14, 2761	8.2	7.0
	Trinidad and Tobago[b]	MICS, 2006	2–14, 2064	4.4	1.0
ASIA	Azerbaijan[a]	DHS, 2006	2–14, 3753	17.0	2.9
	Iraq[b]	MICS, 2006	2–14, 12,789	30.2	NI
	Kazakhstan[a]	MICS, 2006	2–14, 644	0.7	9.8
	Kyrgyzstan[a]	MICS, 2005–2006	2–14, 3311	2.6	10.6
	Laos[b]	MICS, 2006	2–14, 4817	7.5	25.5
	Lebanon[b]	MICS, 2006	2–14, 1025	54.1	NI
	Mongolia[b]	MICS, 2005	2–14, 4505	37.8	13.1
	Palestine	MICS, 2010	2–14, 9496	26.5	13.4
	Syria[b]	MICS, 2006	2–14, 12,847	21.3	16.6
	Tajikistan[b]	MICS, 2005	2–14, 5370	16.2	12.6
	Viet Nam[b]	MICS, 2006	2–14, 2388	9.4	18.8
	Yemen[b]	MICS, 2006	2–14, 2875	41.2	34.1
AFRICA	Algeria[b]	MICS, 2006	2–14, 18,984	22.2	8.4
	Burkina Faso[b]	MICS, 2006	2–14, 4549	19.0	NI
	Cameroon[b]	MICS, 2006	2–14, 5995	25.5	35.8
	Central African Republic[b]	MICS, 2006	2–14, 11,723	31.8	NI

		Survey conducted by, year conducted	Age range of index child, sample size	% Physically abused past month	% Neglected past week
	Congo (Brazzaville)[b]	DHS, 2011–2012	2–14, 7578	25.0	NI
	Cote d'Ivoire[b]	MICS, 2006	2–14, 6463	21.1	59.0
	Djibouti[b]	MICS, 2006	2–14, 3146	20.7	11.8
	Egypt[b]	DHS, 2005	3–17, 14,167	40.3	NI
	Gambia[b]	MICS, 2005–2006	2–14, 4709	21.5	17.4
	Ghana[b]	MICS, 2006	2–14, 3797	9.6	24.8
	Guinea-Bissau[b]	MICS, 2006	2–14, 4799	28	NI
	Liberia[b]	DHS, 2007	2–14, 5391	15.2	NI
	Sierra Leone[b]	MICS, 2005	2–14, 6018	22.5	20.7
	Togo[b]	MICS, 2006	2–14, 4407	24.0	30.2
EUROPE	Albania[a]	MICS, 2005	2–14, 2532	8.5	12.9
	Armenia[a]	DHS, 2010	2–14, 3724	3.8	NI
	Belarus[a]	MICS, 2005	2–14, 2127	2.1	NI
	Bosnia and Herzegovina[a]	MICS, 2006	2–14, 1764	3.0	6.6
	Georgia[a]	MICS, 2005	2–14, 4240	19.0	7.9
	Macedonia[a]	MICS, 2005–2006	2–14, 2015	15.6	9.0
	Montenegro[a]	MICS, 2005	2–14, 2358	6.0	6.3
	Serbia[a]	MICS, 2005	2–14, 2716	7.0	8.8
	Ukraine[a]	MICS, 2005	2–14, 1905	2.2	10.3

Note: NI: no information found.

[a]Countries in transition.

[b]Developing countries (United Nations, 2014).

Table 2

Description of independent variables and data source by construct.

Constructs and variables	Description	Source
Economic stress		
• Income inequality	GINI: measure of dispersion from 0 to 1 where zero expresses perfect equality (e.g. where everyone has the same income) and one expresses maximal inequality	http://data.worldbank.org/data-catalog/gender-statistics
• Poverty	Percent in each country below the poverty line as defined by each country	http://databank.worldbank.org/data/views/variableselection/selectvariables.aspx?source=poverty-and-inequality-database
Cultural spill-over		
• Country in armed conflict	Number of years in armed conflict if in conflict at time independent variable data collected	http://www.pcr.uu.se/digitalAssets/124/124920_1codebook_ucdp_prio-armed-conflict-dataset-v4_2014.pdf
• Death penalty	Coded 0 if abolished for all crimes; 1 if law still allowed but no executions in the past 10 years; 2 if abolished for ordinary crimes; 3 allowed even for ordinary crimes	http://www.amnesty.org/en/death-penalty/countries-abolitionist-for-all-crimes http://www.amnesty.org/en/death-penalty/countries-abolitionist-in-practice https://www.amnesty.org/en/death-penalty/abolitionist-and-retentionist-countries http://www.amnesty.org/en/death-penalty/countries-abolitionist-for-ordinary-crimes-only
Gender inequity		
• Social Institutional and Gender Index (SIGI)	Index represents five dimensions of social institutions related to gender inequality (i.e. social institutions that limit women's and girls' control over their bodies, that increase women's vulnerability, and that normalise attitudes toward gender-based violence). Lower scores indicate less discrimination	http://genderindex.org/
• Gender Inequality Index (available 2010)	Index combines reproductive health (i.e. maternal mortality ratio and adolescent birth rates); empowerment (i.e. proportion of parliamentary seats occupied by females and	http://hdr.undp.org/en/content/gender-inequality-index-gii

Constructs and variables	Description	Source
	proportion of adult females and males aged 25 years and older with at least some secondary education); and economic status (i.e. labour force participation rate of female and male populations aged 15 years and older). Higher scores indicate higher disparities	
Women's health care		
• Coverage for prenatal care	Percent of pregnant women receiving prenatal care	http://data.worldbank.org/data-catalog/gender-statistics
• Ease of access to abortion	Access to abortion: Abortion not allowed (scored 0), general legal principals allowing abortion to save woman's life (1); abortion explicitly allowed to save woman's life (2); abortion allowed under several conditions (3); abortion allowed upon request (scored 4)	http://www.pewforum.org/2008/09/30/abortion-laws-around-the-world/
Children's well-being		
• Child labour	% of children 5–14 reported to have done any kind of work for someone who is not a member of the household in the week preceding the survey	http://mics.unicef.org/surveys; http://www.dhsprogram.com/
• Malnutrition	% children <5 whose weight for age is more than two standard deviations below the median for the international reference population ages 0–59 months	http://data.worldbank.org/indicator/SH.STA.MALN.ZS/countries
Child care burden		
• Children in the household	Births (per women)	http://data.worldbank.org/indicator/SL.TLF.CACT.FE.ZS/countries
• Maternity leave	Number of weeks of paid maternity leave	http://data.worldbank.org/data-catalog/gender-statistics
Economic environment		
• Economic freedom	Average of 10 types of economic freedom (property rights; freedom	http://www.heritage.org/index/explore?view=by-region-country-year

Constructs and variables	Description	Source
	from corruption; monetary, fiscal, investment, trade, financial, investment, business freedom; and limited government) scored from 0 to 100, with equal weight being given to each	
• Economic growth	Growth rate of GDP at market prices based on constant local currency	http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG/countries
Education		
• Literacy	% population 15 and over able to read and write	http://hdr.undp.org
• Female literacy	% of women 15 and over able to read and write	http://data.uis.unesco.org/
Development		
• Human Development	Human Development Index: summary measure of life expectancy, standard of living, and education	http://hdr.undp.org
• Gross Domestic Product	Gross Domestic Product per year is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources	http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG/countries

Table 3

(Negative correlations), percent of variance (R^2), and (p-value) for physical abuse and neglect accounted for by different societal factors.

Constructs and variables	Physical abuse	Neglect
Economic stress		
• Income inequality	.09	.02
• Poverty	.04	.02
Cultural spill-over		
• Country in armed conflict	.07	(−).01
• Death penalty	.02	(−).01
Cultural norms		
• Corporal punishment bans in schools	(−).03	(−).04
• Corporal punishment bans in home	(−).00	.00
Gender inequity		
• Social Institutional and Gender Index (SIGI)	**.34(<.001)**	.27(<.05)
• Gender Inequality Index	.19(<.05)	**.45(<.001)**
Women's health/health care		
• Coverage for prenatal care	(−).08	.11
• Access to abortion	(−).29(<.01)	(−).25(<.01)
Children's well-being		
• Child labour	.14(<.05)	**.50(<.001)**
• Malnutrition	.02	.37(<.01)
Burden of child care		
• Children in the household	.24 (<.01)	**.47(<.001)**
• Weeks maternity leave	(−).35(<.01)	.00
Economic environment		
• Economic freedom	.01	(−).03
• Economic growth	(−).01	(−).00
Education		
• Overall literacy	(−).25(<.01)	**(−).43(<.001)**
• Female literacy	(−).18(<.01)	**(−).50(<.001)**
Development		
• Human Development Index	(−).19(<.01)	**(−).48(<.001)**
• Gross Domestic Product per capita	(−).02	(−).05